

### Appendix F Tower Data File Format

In order to be read by the *wttower.exe* utility program, the tower structural data file must follow a specific format, as shown in the example file below. At the top of the file must be ten comment lines which are read using the 'A80' FORTRAN format. The content of these lines is up to the user and can be used to document the model in the file. Note that the accuracy of the simulation is critically dependent, especially for coupled, high frequency response, on the accuracy of the input data which follows.

The data in the file are organized by vertical station into groups of two lines. All quantities in the data are read into double precision variables using list-directed (\*) FORTRAN format. The first line of each group contains:

height above ground	m
mass/unit length	kg/m
mass moment of inertia about y-axis	kg-m
mass moment of inertia about z-axis	kg-m
CG offset along y-axis	m
CG offset along z-axis	m

The second line in the group contains:

torsional stiffness	N-m <sup>2</sup>
extensional stiffness	N
bending stiffness about y-axis	N-m <sup>2</sup>
bending stiffness about z-axis	N-m <sup>2</sup>

This is the input file for the wc86 tower:

## Appendix F - Tower Data File

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#1 THERE MUST BE EXACTLY TEN COMMENT LINES AT THE TOP OF THIS FILE!
#2     [ADAMS/WT Tower Data File]
#3
#4 Data in this file is organized in sets of two lines.
#5 Line 1 is height, mass, Iy, Iz, y_CG_offset, and z_CG_offset.
#6 Line 2 is GJ, EA, EIy, and EIz
#7 x is axial (nominally vertical). Use consistent SI units.
#8
#9
#0 Created by Andy Elliott @MDI, Feb 1994.
0.000E+00    2.070E+02    5.000E+00    5.000E+00    0.000E+00    0.000E+00
              4.400E+09    3.720E+09    5.800E+09    5.800E+09
1.524E+00    2.027E+02    4.750E+00    4.750E+00    0.000E+00    0.000E+00
              4.074E+09    3.720E+09    5.360E+09    5.360E+09
4.572E+00    1.954E+02    4.500E+00    4.500E+00    0.000E+00    0.000E+00
              3.298E+09    3.720E+09    4.340E+09    4.340E+09
7.620E+00    1.886E+02    4.250E+00    4.250E+00    0.000E+00    0.000E+00
              2.371E+09    3.720E+09    3.120E+09    3.120E+09
1.067E+01    1.834E+02    4.000E+00    4.000E+00    0.000E+00    0.000E+00
              1.382E+09    3.720E+09    1.818E+09    1.818E+09
1.372E+01    1.827E+02    3.750E+00    3.750E+00    0.000E+00    0.000E+00
              9.561E+08    3.720E+09    1.258E+09    1.258E+09
1.676E+01    1.731E+02    3.500E+00    3.500E+00    0.000E+00    0.000E+00
              6.354E+08    3.720E+09    8.360E+08    8.360E+08
1.981E+01    1.511E+02    3.250E+00    3.250E+00    0.000E+00    0.000E+00
              6.354E+08    3.720E+09    8.360E+08    8.360E+08
2.286E+01    1.270E+02    3.000E+00    3.000E+00    0.000E+00    0.000E+00
              6.354E+08    3.720E+09    8.360E+08    8.360E+08
2.440E+01    1.142E+02    2.750E+00    2.750E+00    0.000E+00    0.000E+00
              6.354E+08    3.720E+09    8.360E+08    8.360E+08
```